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A NEW APPROACH TO FIRM GOVERNANCE: THE MULTI-RESOURCE MODEL

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Abstract:
Over the last twenty years or so, the firm has changed considerably, especially with the growing importance of human capital. Paradoxically, the primacy of the shareholder value model has endured. The aim of this paper is to explore the main theoretical and empirical elements involved to propose a new model of firm governance. We view strategic employees of firms as critical resources because they represent specific human capital. We explain that the inalienable residual rights of control they have over their own human capital are inconsistent with disciplinary models of corporate governance. They rather call for the creation of an internal mode of regulation able to effectively mobilize specific human capital by motivating key employees. This model, which we call the 'multi-resource model', is composite: we show that it aims to encourage, retain and collectively enrich critical resources by using an original operational system based on complementary instruments of incentive and coordination.

JEL Classification: D2, G30, J24, L2, M5

Key words: firm governance, motivation, multi-resource model, specific human capital

1. Introduction

As competition has heightened since the early 1990s, technological progress has led to the decline of the "modern business enterprise" which is vertically integrated, intensive in physical capital and characterized by a separation between ownership and control (Berle & Means, 1932; Chandler A. J., 1977; 1990). Large conglomerates have been broken up and their units have been spun-off as stand-alone firms. Vertically integrated manufacturers have relinquished direct control of their suppliers, and moved towards inter-firm relationships. Different disintegrated forms (outsourcing, subcontracting, *etc*.) have been developed, related to the decreasing optimal size of units of production, the increasing modularity of productive activities and the growing differentiation of final demand (Brusoni, Prencipe, & Pavitt, 2001). In globalized economies, innovation results from these recent industrial reorganizations; nevertheless, innovation gives rise to two contradictory phenomena. On the one hand, the propensity to innovate depends on increasing needs for financing. Financial deregulation has strengthened competition between financial institutions and developed new instruments to control and share risk (Colletis, 2007). Moreover, financial revolution has attracted external investors and given more control to shareholders while stock market use has extended. Financial and accounting transparency to strict international standards is increasingly required of borrowers by investors and analysts. In this context, the shareholder model of corporate governance, emblematic of joint-stock companies and thus of the modern business enterprise, became established: during the two last decades, corporate strategies in favor of shareholder value creation have been intensified. Corporations have adopted a "downsize and distribute" principle based on cutting the size of their labor force (*downsize*), in an attempt to increase the return on equity to increase dividends (*distribute*) (Lazonick & O'Sullivan, 2000, p. 18)[1]. On the other hand, the propensity to innovate depends on increasing needs for specific intangible resources. In particular, the demand for innovative process and quality improvement can only be satisfied by specialized and mobile employees. Innovation comes from specific human capital at every stage of the production process. Thus, human capital tends to be more important than inanimate assets and employees tend to get involved in a participative work organization of a post-Taylorian form (Bué, 1996; Lorenz & Valeyre, 2004). Specialized employees with a unique skill or a particular know-how represent valuable resources which are immaterial, inalienable and non-imitable instantaneously (Kochan & Rubinstein, 2000).

[1] The "downsize and redistribute" regime follows a corporate governance principle already based on the maximization of shareholder value. The latter is called "retain and reinvest" (Lazonick & O'Sullivan, 2000, p. 14). In this previous regime, corporations tended to *retain* both the money that they earned and the people whom they employed, and to *reinvest* in physical capital and complementary human resources.

Specialized employees control assets able to minimize many transactional and productive costs so that the firm can improve its competitive position. As the importance of human capital has grown, power has moved away from the top management; power is much more widely dispersed through the firm, in particular in the hands of key employees because they represent decisive resources for the firm. Finally, the separation between ownership and control becomes blurred in the present firm but does not challenge the shareholder primacy view of corporate governance. This paradoxical situation has largely been responsible for the harmful drift of financial capitalism of the beginning of the 21st century (Aglietta & Rebérioux, 2004).

We suggest that maximizing shareholder value is inconsistent with a value creation process achieved by a group of employees. While this idea is not new (Marx, 1867), the negative effects of these growing contradictory trends have not been taken into account. We advance that equating all assets to a financial asset, at least at a conceptual level, amounts to considering that human assets are generic, transferable, and separable from the individual that invests them. Actually, innovation resulting from partnerships strategies is not incompatible with the deep development of funds and information exchanges; however, human assets that support innovation cannot be coordinated and controlled solely by pure financial mechanisms. Consequently, if the paradox of shareholder primacy is maintained, the long-term viability of firms may be called into question. Furthermore, since specific human capital is a key element of economic power in the firm, traditional disciplinary methods of solving conflicts of interest and risk-sharing are obsolete. Other solutions are needed to deal with the intangible, inalienable and irreproducible nature of valuable human assets. In these circumstances, we suggest that firm governance has to be reconsidered to take into account the changing nature of firms since the 1990s. This paper considers firm governance as the general system by which the exercise of power on specific non-human and human assets is regulated.

This paper has a dual purpose: (1) to propose a detailed analytical reading of the governance of specific human capital-intensive firms; (2) to suggest an original operational system supporting the new model of firm governance that we propose. Given the multidisciplinary nature of firm governance and moving beyond the legal-financial approach to corporate governance, this paper seeks to found an integrative theory of firm governance. It aims to propose new predictions and/or explain phenomena that cannot be explained by theories considered separately (Foss, 2000, p. 67).

The paper is organized as follows. The second section will show that the role of specific human capital, frequently neglected by economists writing about the firm, calls for a renewed model of firm governance. The aim of this model, which we call the 'multi-resource model' (Cézanne-Sintès, 2008), is to maintain and strengthen the links of economic dependency between the key members of the firm viewed as critical co-specific[2] resources that develop the firm. Thus, firms built on specific human capital have to maximize their collective value potential; they have to optimize their multi-resource value. The third section will reformulate the central issue of the multi-resource model and try to infer underlying operational modes of governance. We will present the multi-resource governance as a composite model of internal regulation able to effectively mobilize specific human resources by motivating key employees. We argue that such a model of firm governance is achieved by the simultaneous use of vertical mechanisms of incentive, horizontal modes of work and decentralized decision-making processes. The fourth section will conclude the paper.

2. The maximization of multi-resource value

In a context of contractual incompleteness, the creation and distribution of relational quasi-rent can be negatively affected by hold-up threats: employees who control specific inalienable assets can underinvest themselves. Consequently, the firm has to find the means to preserve its critical resources. We suggest that the regulation of power relationships gives rise to two main issues. Firstly, the firm has to encourage key employees to adhere to a common organizational purpose. Secondly, the firm has to guarantee continuously the co-specialization of valuable knowledge, skills and know-how.

2.1. Ex post hold-up threats and the preservation of specific human capital

A human capital-intensive firm can be defined as a firm whose value mainly depends on the human assets of the workers it employs. This conception inevitably implies that human capital is specific by nature; the field of application of specific human capital is limited outside the relationship in which it has been developed (Williamson, Wachter, & Harris, 1975; Klein, Crawford, & Alchian, 1978). At first sight, a human capital-intensive firm may seem to represent an extreme case of firms. We do not agree with this intuition; on the contrary, we think that the human capital-intensive firm is a common type of firms which is emblematic of "the new economy". The new economy describes all sectors that make

[2] According to Hall & Soskice (2001), co-specific assets are assets whose returns depend heavily on the active cooperation of other specific assets, which cannot readily be turned to another purpose.

important R&D efforts and base their innovation capabilities on intangible resources (Brynjolfsson, Hitt, & Yang, 2002). Thus, the new economy includes both new fast-growing sectors like biotechnology and traditional sectors in full transformation like the car industry. In this perspective, we aim to study the majority of current firms.

The critical resource theory (Rajan & Zingales, 1998; Zingales, 2000) can be taken as the preferred framework to analyze human capital-intensive firms. In brief, the firm is viewed as a nexus of specific investments in human capital. Since human capital cannot be appropriated, the firm has an enlarged role of coordination: by giving access to a heterogeneous group of productive partners who participate in the division of labor, the firm manages *ex ante* the co-specialization of critical resources within its economic boundaries (Rajan & Zingales, 1998; Sautel & Sintès-Cézanne, 2007). In parallel, the multiple key partners controlling inalienable resources that are fundamental for the firm, in particular specialized employees have strong economic power; the firm does need their resources to develop its activity, to grow or even to survive. Following this representation of the firm, the problem of governance is to limit the exercise of power by strategic employees, on the one hand, and by the firm, on the other. The regulation of power relationships is central to protecting productive synergies within the firm and thus to creating a total value superior to the market value of the sum of individual contributions. Since power is fragmented, firm governance does not aim to protect the surplus of only one group of agents; economic dependency links between the firm and strategic employees call for a reconsideration of the internal power structure. Some economists have highlighted this rethinking of firm governance (Porter-Liebeskind, 2000; Rajan & Zingales, 2000; Keenan & Aggestam, 2001) but no specific studies have been made of it.

Employment contracts are more incomplete than any other forms of contract because they concern human capital which is by nature intangible and non-transferable. Firstly, employees' human capital is difficult to measure. Secondly, the value created by human capital is difficult to distinguish from the value created by other assets. Finally, the employment relationship is affected by a dual expropriation risk resulting from the economic interdependency between the employer and key employees. Each party would like to capture *ex post* a bigger share of the joint value they can create together (Tirole, 1993). On the one hand, since specific human capital is inalienable, and since contracts are not complete, the firm can expropriate a share of the quasi-rent superior to the value that its specific investments could pay. Such behavior is a major obstacle to productive cooperation and to an efficient distribution of costs and surplus. On the other hand, critical employees know that their human capital is crucial for the productive activity and the competitiveness of the firm. They have inalienable residual rights of control over their critical resources, and thus over the firm (Gibbons, 2005). As soon as production process starts, strategic employees hold strong economic power, and consequently substantial negotiating power. These employees could expropriate a large fraction of the value of the firm by developing outside opportunities. When they accumulate enough power, central employees can underinvest or even exercise their legal right to leave the firm (Baron & Kreps, 1999). In particular, they can threaten to break the employment contract. Since contract breakdown cannot occur without loss for at least one of the contractual parties (Klein, Crawford, & Alchian, 1978), such a situation is very detrimental even if, most of the time, the firm is the party that breaks the contract[3]. When a decisive employee leaves the firm, he reduces organizational and reputational values of the firm (Teece, 2003). By taking a part of the production team's human capital, the employee deprives the firm of a critical link in the chain of specific investments. He can also cause the chain departure of specialized team members, that is to say workers who depend on him. In sum, a key employee can undermine the integrity of the firm.

Finally, to survive, the firm has to maintain specific relationships with key employees. Human capital-intensive firms must use governance mechanisms to incite *ex post* employees to invest in human capital within valuable firm activities (Wang & Barney, 2006). This is a *sine qua non* for the long-term viability of firms, especially innovative ones. Firms that operate on complex high tech markets characterized by high levels of R&D investments and specialized patented applications need their key employees to invest continuously and specifically in human capital (Guilhon, 2004). Thus, firm governance has to go beyond the traditional issues with which it has concerned itself. As power and rents depend mainly on critical inalienable resources, firm governance must not deal with efficient modes of conflict-solving, to maximize shareholder or stakeholder value, but encourage key employees not to quit the firm, and to continuously make firm-specific human capital investments. In other words, strategic employees have to be encouraged to pursue their relationship with the firm so that the latter can retain the wealth indispensable to its productive activity. The governance of human capital-intensive firms that we describe in this paper as the 'multi-resource model' recognizes specialized employees as valuable complementary resources that enhance the

[3] Generally, the firm has to adapt its strategy to a competitive environment; thus the firm can decide to fire employees because their human capital is getting obsolete i.e. unsuited to market demand. In this case, employees' power is noticeably reduced (Cornell & Shapiro, 1987).

collective value of the firm and ensure its long-term viability. The final objective of the multi-resource model is to maximize the value of the various critical inalienable assets owned by key employees in the nexus of specific investments, *i.e*. to maximize multi-resource value. To reach this objective, the firm has to promote the superiority of collective interests over personal ones. This incentive issue may be considered traditional, but it is essential to prevent conflicts between productive partners and to avoid the decline or even the death of the firm.

2.2. The priority of collective interests over personal ones: a matter of incentive

Contractual theories of the firm agree that the question of the alignment of interests is an importance aspect of firm governance. But this issue is treated differently according to the definition of the firm. On the one hand, agency theory advocates that behavior has to be aligned to a superior individual interest, that of the principal, who is described as the unique residual claimant in the firm (Alchian & Demsetz, 1972; Jensen & Meckling, 1976). On the other hand, transaction cost approaches suggest that interest alignment is ensured when everybody acts to satisfy the owner(s) of the property rights (Grossman & Hart, 1986; Hart & Moore, 1990; Hart, 1995). Despite analytical differences, contractual theories of the firm develop a legal vision of the firm in which the centralization of residual rights of control coordinates *ex ante* and *ex post* incentives. The conception of the firm as a nexus of specific investments in human capital, proposed by the critical resource theory, suggests that interest alignment should be reexamined in the light of the fragmentation of power resulting from the dispersion of inalienable residual rights of control (Rajan & Zingales, 2000; Zingales, 1998; Zingales, 2000).

We argue that firm governance should aim to satisfy neither shareholder needs nor stakeholder expectations. Shareholder primacy and stakeholder legitimacy are challenged, in favor of a model of firm governance based on the defense of multiple critical resources. In fact, the multi-resource model has to ensure the alignment of collective interests. Each party has to be encouraged to give up her own ambitions to commit herself collectively in favor of the organizational welfare. From this perspective, firms can be considered as systems of cooperation of human activity (Barnard, 1938). Now, cooperation can be reached if the efforts of all critical resource-holders are focused on a common preferable goal. In particular, the maximization of multi-resource value depends on the complementarity links between all the critical resources, and requires incentives to organizational interest alignment. According to Gottschalg & Zollo (2007, p. 420), "*organizational interest alignment can be defined as the* *degree to which the members of the organization are motivated to behave in line with organizational goals"*.

We propose to analyze how different firm members can coordinate their actions in order to reach a collective goal without requiring an authoritarian or non-authoritarian external intervention. We focus on key employees who incorporate specific human capital within the employment relationship. Key employees have inalienable rights of control and need to be encouraged to behave in line with organizational goals, which are the employer's goals. As for shareholders and managers, they are viewed as ordinary partners: they own generic resources and automatically behave in line with organizational goals. In this sense, what matters is the degree to which collective goals and the personal goals of key employees are aligned. Contrary to traditional approaches, we affirm that understanding how objectives have been set and who has prioritized them is of little use. We suggest that critical resource-holders in human capital-intensive firms should embrace a common purpose from the beginning of the relationship with their firm. To serve this purpose, the multi-resource model of governance should perpetuate the alignment of organizational interests, and can thus maximize the creation of collective value and distribution of the surplus.

Lasting commitment from key employees within the firm depends both on contract evolution and on outside options. More precisely, it depends on their negotiating power and on a fundamental right linked to their organizational membership (Rebérioux, 2005). To prevent underinvestment risks resulting from key employees' exercise of power, the multi-resource model of firm governance has to convince them that investing specifically is of benefit to them as much as it is to the firm. One solution could be to build a system that minimizes in all the stages of the employment relationship the distance between the diverse individual preferences, thereby reducing the tension in power relationships (Grandori & Soda, 2004). In this context, employment relationship models and incentive systems need to be integrated, as McGregor (1960) suggests in the Y Theory. Lessons have been drawn from this seminal theory, and it has recently been reconsidered in incentive theory focused on the human dimension (Ellingsen & Johannesson, 2008). The main idea is to create conditions so that firm members can reach their own goals by turning their efforts towards the success of the firm. Preventing hold-up threats is not the only problem of the multi-resource model of firm governance. Since the firm is economically dependent on strategic employees, the maximization of its value potential requires the retention and enrichment of critical resources.

Thus, the prior aim of the multi-resources value approach is to co-specialize *ex post* key workers.

2.3. Retaining and enriching critical resources: a question of ex post co-specialization

The collection of specific human resources within the production team (*i.e.* the firm) is a decisive factor of organizational quasi-rent creation (Aglietta, 1997). Because of productive synergies, the value of the firm is higher than the sum of the individual critical resource-holders' values (Engelen & Vanderberghe, 2005). We believe that the co-specialization of key employees is a central issue to optimize the multi-resource value: in this way, the firm must meet two challenges, retaining and enriching the critical resources these employees represent.

We maintain that retaining critical resources within the firm means securing the loyalty of decisive employees, which means consolidating the employment relationship by empowering them. On the one hand, maintaining critical resources within the firm prevents reduction of the multi-resource value. Indeed, the firm can maximize multi-resource value if decisive employees are not incited to seize their outside opportunities. So, the firm should ensure key employees' commitment over the long term by setting up obstacles to the exploitation of their human capital in another productive entity (Coff, 1997; Rajan & Zingales, 2000). However, the power of the firm should not be weakened too far, for fear that a disproportionate counter-power might jeopardize the joint value they can create together. On the other hand, the purpose of securing the loyalty of strategic employees is to obtain and protect the best possible combination of workers. Yet, contrary to what some authors state (Grandori & Soda, 2004; Roussel & Mesrar, 2007), it is no use securing the team of workers that maximize, at any given moment in time, investments in critical resources. In other words, we believe that a controlled turnover of labor-force within a bounded external market is not a solution. Employees who extend their knowledge portfolio energize the internal labor market but strengthen at the same time their employability, their outside opportunities, and thus their *ex post* negotiating power. We propose that a less wasteful solution would consist in retaining within the firm the same employees whose human capital would be maintained at the level of the market demand and needs by using accumulation and enrichment methods. In this way, specific human capital is enriched within the firm itself.

The retention of firm-specific employees improves the stock of specific human capital. Consequently, specific human capital is endogenous within the context of the creative function of the firm (Benoît, 2005). Moreover, the retention of firm-specific employees fixes the dependency relationships that link them to the employer by empowering each party. Even if the value creation process requires the use of co-specific resources that increase workers' productivity only within the firm that employs them, it should not change these co-specific resources in core rigidities by maintaining too narrow a base of core skills (Leonard-Barton, 1992). Rather, the firm and key employees should act in synergy to enrich specific resources. An appropriate internal market, characterized by a limited number of outside options during careers, can create such a favorable situation at the collective level. Indeed, employees who hold down a stable job foresee that it is in their interest to promote the firm's prosperity and to behave cooperatively. As for the employer, he improves the efficiency of human resources allocation. The necessity to invest specifically in human capital consists in preventing its depreciation and its transferability.

A model of firm governance adapted to specific human capital-intensive firms should optimize the combination of specific human assets in the most wealth-creative activities. In this way, the multi-resource model aims to (1) incite key workers to invest specifically and durably in human capital and (2) protect the firm's investments themselves, to develop and exploit growth opportunities. This new model of firm governance is endogenous to the intangible, inalienable and difficult-to-reproduce nature of specific human assets (Rajan & Zingales, 1998; Wang, He, & Mahoney, 2009). In particular, it is based on the reinforcement of inalienable residual rights of control held individually by strategic employees. In other words, the multi-resource model of firm governance is composite: it consists in collectively encouraging, retaining and enriching key employees.

3. The multi-resource value approach: a composite model of firm governance

Employees who hold specific competences should be empowered to create value for all the critical resources that make up the firm, which is to say for themselves and for the firm (Rajan & Zingales, 2000). The multi-resource value approach is not reduced to a strict incentive issue; it aims to meet the global challenge of motivating key employees, which could be based on a multidimensional operational system.

3.1. A global issue: the motivation to work

Motivation describes all the conscious and unconscious causes which determine individual commitment behaviors in an activity. And work motivation points out that the firm’s success depends on collective performances which themselves depend on individual results (Roussel, 2002). Thus, a strong work motivation results in more employees’ commitment, more innovation and more flexibility (Arnaud, Frimousse, & Peretti, 2009).

Motivation can be considered through the double location of the activity’s impact: the activity performed has an impact that is external or internal to itself and an impact that is external or internal to the individual (De Charms, 1968). Firstly, the location of the activity’s impact in relation to itself allows to distinguish the diverse forms of extrinsic motivation from intrinsic motivation. If the effects of the activity are external to itself, motivation is extrinsic. Conversely, if the effects of the activity are internal, motivation is intrinsic. Secondly, self-determination theory, originated by the social psychologists Deci and Ryan in the seventies, considers motivation through the location of the activity’s impact in relation to the individual. Self-determination describes the ability to choose within the largest number of possible situations, and implies that the three basic psychological needs – autonomy, skills and relatedness based on mutual respect and confidence – should be satisfied to foster well-being and health. Self-determination theory clarifies the definition of motivation, by considering the most fundamental psychological need, autonomy. This refers to the universal urge to be the causal agent of one’s own life and to act in harmony with one’s integrated self. Moreover, the need for autonomy founds individual choices when behavior is initiated (Deci & Ryan, 1985). The notion of self-determination underlies the analysis of the “motivational continuum” which depicts the degree to which employees, viewed as critical resource-holders, commit themselves to work (Gagné & Deci, 2005). This motivational continuum defines the level of self-determined motivation reached by an employee according to the degree of satisfaction of his need for autonomy. When the effects of the activity are external to him, a strategic employee finds reasons for commitment in the environment, for example on the basis of controls, constraints, promises or rewards. After amotivation, which defines the absence of self-determined motivation, external regulation is the weakest level of self-determined motivation that is called “extrinsic motivation”. On the contrary, when the effects of the activity are internal to the key employee, motivation is self-determined or self-regulated: the activity is enjoyed for itself and not for somebody or for reasons included in his environment. Thus, the individual need for autonomy is completely satisfied. Finally, if the effects of the activity are internal to the employee and external to the task accomplished, internalized extrinsic motivation is described. Internalized extrinsic motivation is a hybrid form of motivation that depends on the degree of internalization of the external regulation by the individual (*idem*)[4]. According to this interpretative framework, the firm can decide either to extrinsically motivate employees on the basis of an incentive system or to influence self-determined motivations to "naturally" shape their behavior. From this perspective, we can clarify the concepts of extrinsic and self-determined motivation (intrinsic and internalized extrinsic motivation), and extend their comprehension to instruments that support the multi-resource model of firm governance.

Purely extrinsic motivation means that an individual acts only in order to obtain an outcome which is external to himself and to the task performed. In the domain of work, the employee is extrinsically motivated by getting results distinct from the work itself (Baron & Kreps, 1999; Deci & Ryan, 2000). He is also extrinsically motivated by certain actions and decisions of others, since they influence the consequences of his activities. Purely extrinsic motivation encourages the employee's involvement in an activity for its monetary consequences (obtaining a higher remuneration through performance bonuses or a professional advancement), material consequences (improvement of work conveniences) and social consequences (search for reputation, for gratitude). Purely extrinsic motivation largely depends on contractual hierarchical mechanisms oriented by incentives and control: the disciplinary effect partly determines the balance between the increase of individual employees' productivity and the regulation of opportunistic behavior. Several studies on financial remuneration modes and performance evaluation highlight the positive correlation between the use of such incentive mechanisms and employees' purely extrinsic motivation (Prendergast, 1999; Lazear, 2000; Nagin, Rebitzer, Sanders, & Taylor, 2002), in line with the recommendations of contractual theories of the firm. As we have explained, the multi-resource model of firm governance has to meet the challenge of encouraging critical resource-holders to behave according to the collective interest. This incentive issue can be solved by developing individual systems of external regulation. For example, financial and institutional participation systems or different forms of compensation extrinsically motivate key employees. Indeed, strategic employees are satisfied because they obtain an important financial return on their investments, or because they are identified as central members in the firm that allocates them formal residual rights of control (French & Rosenstein, 1984). Consequently, the role of the hierarchy in fixing remunerations is a major determinant in the multi-resource model of firm governance.

[4] According to self-determination theory, internalization is an overarching term that refers to three different processes: introjection, identification, and integration. For more details, see Gagné & Deci (2005, pp. 334-336).

Intrinsic motivation comes from rewards inherent to an activity itself: it stems from the enjoyment of performing a task and from a need for immediate satisfaction (Deci & Ryan, 2000). Intrinsic motivation is the perfect incarnation of self-determination. The activity itself is the reason why an intrinsically-motivated individual commits himself. No direct or indirect valuable consequences through incentives, constraints or sanctions are necessary for the individual to invest himself. Thus, an individual is intrinsically motivated when he voluntarily performs activities; he acts out of interest for the activity without expecting rewards and without hoping to avoid feeling guilty. Within the employment relationship, key employees are intrinsically motivated if they can directly satisfy their needs by working. Among others, cooperative relationships and willingly accepted organizational practices and work conditions support intrinsic motivation. In the context of the multi-resource model, granting autonomy and giving employees a sense of responsibility relieves them of the feeling of hierarchical control. In addition, it encourages self-subordination to the collective organizational interest. Freedom of action, liberty granted to employees, "*raises the perceived self-determination of employees and therewith strengthens intrinsic motivation*" (Osterloh & Frey, 2000, p. 543). In turn, this may lead to an increase of their creativity in the pursuit of organizational goals (Foss, Foss, & Vazquez, 2006). Moreover, a positive correlation may link employee participation, on the one hand, with trust levels, intrinsic compensation, involvement in organization, work satisfaction and the stress level, on the other (Bélanger, 2000). From this perspective, we believe that labor organization and labor division underpin the alignment of interests and the co-specialization of specific human assets when social capital is favorable. In fact, the durability of employment relationships is ensured by organizational practices that are innovative, attractive and useful in themselves. Intrinsic motivation creates a common will to increase the value of the team production's collective specificity. In addition, Baard, Deci, & Ryan (2004) empirically highlight a positive correlation between a work organization favorable to autonomy and competences and, on the one hand, a high degree of intrinsic motivation, adaptability and changes and on the other, high levels of performance.

Like intrinsic motivation, internalized extrinsic motivation depends on self-determination, since individuals undertake an activity because they want to. Deci & Ryan (2000) argue that self-determination can be analyzed beyond the principle of satisfying the vital need for autonomy. According to these authors, internalization takes place when individuals perform an activity not because this activity is interesting and satisfies a need in itself, but because it is fundamental and has a value for them. In other words, internalized extrinsic motivation corresponds to individuals' commitment to the importance that they give to values, norms and other significations represented by the activity undertaken and the resulting satisfaction (Ouchi, 1980). From this perspective, notably, a key employee accepts voluntarily to undertake pro-social actions, which are actions aiming to help or benefit others (Eisenberg, 1982; Bénabou & Tirole, 2006; Ellingsen & Johannesson, 2008). More generally, a strategic employee deliberately adopts an observable behavior aimed at supporting the collective benefit or sharing costs and benefits with the group. As far as the multi-resource model of firm governance is concerned, the representation of the most essential employees on the board of directors, for example, does not affect intrinsic motivation because of long and tiresome assemblies or even hard debates concerning strategies of the firm. Rather, it affects internalized extrinsic motivation by asserting the employees' point of view and aiming to safeguard co-specific resources within the firm. The motivating factor does not come from the task itself, which can be uninteresting; it comes from the meaning of the motivation, moral values and social norms that employees' representation promotes or allows to reach through its effects, and from the resulting collective utility. A key employee internalizes these externalities and does not need to be extrinsically motivated by disciplinary incentives.

We believe that self-regulated motivations self-strengthen the power of the employer and of strategic employees in human capital-intensive firms. On the one hand, strategic employees are aware that they control critical resources, and need to be intrinsically motivated because they hold inalienable residual rights of decision on them. Thus, they want to enjoy their specific relationship with the firm. On the other hand, strategic employees should acknowledge that respecting collective interests and guaranteeing co-specialization are two vital issues for the durability and the growth of the firm. Under these conditions, they internalize extrinsic sources of motivation. The human capital-intensive firm has to set up mechanisms allowing key employees to internalize the constraint of the long-term employment relationship; key employees do not need strong autonomy to behave according to organizational goals and to enrich the specific human capital that they control.

Economists of the firm re-construe the concept of motivation originated by social psychologists. For example, Baker, Jensen, & Murphy (1988, p. 593) argue that "*a thorough understanding of internal incentives is critical to developing a viable theory of the firm, since they largely determine how individuals behave in organizations*". Non-economic practices like trust, equity, culture or moral should be taken into account in addition to traditional economic incentives. According to Gottschalg (2004), the concept of motivation even builds the renewal of the theory of the firm and the rethinking of corporate governance, while contractual approaches of the firm base their analysis only on control and incentives (*i.e.* on purely extrinsic motivation). We advance that the balance of powers between the employer and critical employees entails offsetting the different forms of motivation. Thus, the multi-resource value approach aims to tackle the global issue of motivating key employees from the perspective of "motivational self-reinforcement".

3.2. The self-reinforcement of motivations

If the economic literature has focused on the effects of extrinsic regulations on intrinsic motivation (*crowding theory of motivation*: Frey, 1997; Osterloh & Frey, 2000; Frey & Jegen, 2001), no consensus has emerged about the nature of those effects. By suggesting that there is a reciprocal (not a one-way) dynamic relationship between the purely extrinsic motivation and the intrinsic motivation of individuals, we are taking position in favor of motivational complementarity. According to the theory of supermodularity (Milgrom & Roberts, 1995), the marginal efficiency of a factor – in this case the purely extrinsic motivation – increases with the level of another factor – in this case the intrinsic motivation, and *vice versa*. When contracts are incomplete, the key advantage of intrinsic motivation is that it can remedy the inefficiency of incentives. Intrinsic motivation is indispensable when extrinsic motivation cannot resolve certain extracontractual problems, because employees' behavior cannot be observed or because the results cannot be attributed to individuals (Osterloh & Frey, 2004). In particular, the intrinsic dimension protects the specific relationship between specialized employees and the employer by strengthening the attraction of employees to their work and favoring their attachment to the firm. It also contributes to the creation and pooling of knowledge by ensuring the involvement and collaboration of employees in production teams. Ultimately, intrinsic motivation offsets the harmful effects of tangible forms of external regulation. For example, an employee may be handsomely paid for the work he does, but if he derives no satisfaction from accomplishing his task, he may eventually decide to leave the firm, taking with him a share of the organizational rent. But if the firm succeeds in coupling the extrinsic motivation of financial incentive with a system that favors intrinsic motivation, by giving employees more responsibility or initiative, for example, then it can maintain the specificity of the employment relationship over the long term. This will form the basis of our argument for the need to combine the intrinsic and extrinsic dimensions of motivation within the framework of the multi-resource governance model.

From our point of view, the self-reinforcement of motivations is taken to an extreme when internalized extrinsic motivation is considered, hitherto neglected by many authors who have classified it too hastily in the domain of the extrinsic, or confusedly in the domain of the intrinsic (Amabile, 1993; Frey, 1997; Kreps, 1997; Osterloh & Frey, 2000; Bénabou & Tirole, 2003). Internalized extrinsic motivation is an intermediate form of self-determination with an intrinsic component and an extrinsic component. We argue that an appropriate degree of assimilation and acceptance of the external constraint by a key employee achieves a balance between the need to transmit the rules to him and the satisfaction of his need for autonomy. Moreover, introducing a measure of control based on individual self-regulation (not only based on external regulation) can be effective because it generates a feedback effect on the individual's need for skill and social relations without negating the need for autonomy. In turn, the internalization of incentives has a positive influence on the employee's behavior at work. Therefore, it is important to recognize the role of internalized extrinsic motivation in developing the loyalty and commitment of employees, especially managerial staff (Colle, Peretti, & Cerdin, 2005).

Ultimately, purely extrinsic motivation and self-regulated motivation should be combined. The overall motivation of key employees is a fundamental condition of the regulation of powers in the employment relationship. The multi-resource model of firm governance supports this point of view in terms of both the issues and the methods involved. We argue that this new model of firm governance can achieve the self-reinforcement of motivations with the help of different instruments that are themselves complementary.

3.3. A combination of different mechanisms

In keeping with Rebérioux (2005), we believe that firm governance needs to be developed to take into account three decisive elements in the new vision of the firm: (*i*) the importance of human capital and its inappropriable and inimitable nature, (*ii*) the complementarity and inseparability of assets, and (*iii*) the incompleteness of contracts. According to Grandori & Kogut, (2002, p. 225), "*Knowledge complexity, differentiation and specialization, complementarity, and interdependence are emerging as important contingencies affecting effective organization and governance solutions*". Emphasis on the centrality of co-specific resources, and therefore emphasis on the collective character of organizational rent, implies to found the multi-resource governance model, distinct from the standard contractual models.

Since it is not possible to contractualize the income to be expected from investments in specific human capital and because the value-added of each individual's contributions is hard to measure, other methods should be considered than the simple use of incentives or purely extrinsic motivation. Instruments of protection of the collective interest and the retention and enrichment of specific human capital are endogenous to the firm and therefore take into account the specificity of its critical resources. We uphold the idea that the multi-resource firm governance encompasses mechanisms of extrinsic motivation and self-regulated motivation. In other words, the complementarity of motivations suggests a complementarity in the governance practices that seek to promote them. The multi-resource value approach requires a balanced combination of financial and non-financial controlling mechanisms (purely extrinsic motivation) and a new set of practices of organization and coordination (self-regulated motivations). This combination allows to take into account the double location of sources of motivation and to evaluate the effects of the composite operational system on the regulation of power within the organization (Deci & Ryan, 2000). The combination of extrinsic and intrinsic dimensions generates an effect of virtuous synergy for the firm: it guarantees control over the multilateral risks of *ex post* expropriation and valorization of the co-specific resources. Consequently, the multi-resource model can be operationalized in the form of protective structures for the specific employment relation. In line with March & Simon (1958), we advance that individuals' decisions to cooperate and effectively participate in the firm are organizational problems of incentive and coordination.

The conditions of use of the labor force in the productive activity, viewed from the microeconomic perspective of the motivation to work rather than the increase in production capacities (Boyer, 2004), can serve as the basis for a characterization of the operational instruments of the multi-resource model of firm governance. The trend towards more individualized wage practices and the shift in productive coordination towards a more collective approach supply tangible elements of the redistribution of powers within the modern firm. In other words, parallel tendencies to the verticalization of incentives and horizontalization of work organization account for innovative high-performance work practices. The latter are gradually replacing the practices of the Taylor model and transferring power to employees (Cappelli & Neumark, 2001). Most of the literature views these new forms of payment and coordination as an expression of a degradation of the employment relationship in favor of the employer (Boltanski & Chiappello, 1999; Ramsey, Scholarios & Harley, 2000). Indeed, it is often argued that the aim of current human resources management policies is to improve labor productivity and flexibility to the detriment of employees' welfare (Green & McIntosh, 2001; Green, 2004; Askenazy, Cartron, De Coninck & Gollac, 2006). But this point of view has been hotly challenged on the basis of documented studies (Guérin, Wils & Lemire, 1997; Berg, 1999; Appelbaum & Berg, 2000). Our belief is that the new forms of labor force organization may possibly constitute a toughening of work conditions for employees with generic human capital, but that the same is not true in the case of employees with specific human capital. For the latter, they represent a way of making voluntary the application and enrichment of the knowledge and skills underlying the improvement of the relationships specific to the organization. Consequently, we shall consider the verticalization of incentives and the horizontalization of work as key instruments of work motivation and not as the manifestation of an intensive use of the labor force. In addition to these two modern practices for strengthening key employees' commitment, the third fundamental dimension is the decentralization of operational and strategic decision-making, in other words the delegation of residual rights of control in the domains of production and management. In broad outline, the combination of these three types of strategic practices create a work environment favorable to the intrinsic motivation of employees (horizontalization of work) and the internalization of external regulation (decentralization of decision-making) while at the same time rewarding the development of specific skills (verticalization of incentives). In the end, without appropriate economic incentives, interesting work content and shared norms and values, employees may be discouraged from investing in non-transferable specific human capital, preferring to invest in more general skills that can be exploited outside the firm.

These forms of specific human assets management are not strictly part of the mechanisms of governance; they lie outside the field of what is traditionally covered by the term corporate governance or firm governance. Nevertheless, their objectives undoubtedly involve the value creation and preservation. There is a point, therefore, where the forms of human resources management (HRM) and the mechanisms of governance interpenetrate (Pollin, 2004), while it is acknowledged that firm governance and the ownership structure of firms influence HRM (Deakin, Hobbs, Konzelmann, & Wilkinson, 2006; Deakin & Rebérioux, 2009). In this perspective, the most recent theories of the firm maintain, like Blair (1999), that the governance mechanisms of the relationships between employees and the firm should no longer be treated separately from firm governance. Even if the general policy of the firm is mainly determined by its executive officers and the maximization of value is their responsibility, the centrality of human capital prohibits us from neglecting the role assigned to

HRM in firm governance. By means of incentives, control mechanisms and organizational practices, its objective is to maximize collective wealth. We therefore affirm that the operational model of governance can be considered in a broader perspective than the traditional models that are strictly limited to the legal conditions of the allocation of alienable control rights among stakeholders. We consider the multi-resource model of firm governance as the whole set of mechanisms motivating key employees to work together to maximize the rents of co-specific human capital and make them completely available. According to this definition, the verticalization of incentives, the horizontalisation of work and the decentralization of decision-making powers make up the operational multi-resource model of firm governance.

4. Conclusion

In this article, we have shown that the mobilization of specific human assets in the division of labor calls for a rethinking of the regulation of power exercise within a context of preservation of economic dependence relationships. Therefore, we have proposed a revised model of governance for specific human capital-intensive firms; we call this the multi-resource model of firm governance. Unlike traditional disciplinary models, which seek to satisfy residual claimants' particular interests, this new model of governance is collective by nature: it aims to ensure that the co-specific investments in key resources are lasting and prosperous. We have explained that the maximization of multi-resource value requires to encourage, retain and enhance employees' specific human capital within a logic of productive complementarities; ultimately, it is based on a global issue of motivation of long-term specific relationships. The multi-resource value can only be maximized by and for individuals who are rewarded and self-determined. In addition, we have affirmed that the complementarity between motivations should be supported by complementary instruments, to ensure that in the future, the key employees receive appropriate rent and satisfaction; to achieve the self-reinforcement of motivations, the multi-resource model of firm governance should make a synergic use of operational mechanisms. Thus, we have suggested that a combination of vertical incentive practices, horizontal work methods and decentralized decision-making founds the multi-resource model of firm governance.

The research agenda about the multi-resource model of firm governance is not exhausted. If it is adapted to the valorization of co-specific human assets, the multi-resource model of firm governance will help to create competitive advantages and so generate gains for the firm that implements it. These gains find expression in the maintenance and exploration of growth opportunities contained in inimitable assets and in the extension and exploitation of growth opportunities by the implementation of multi-resource governance. In other words, future research would have to show that key resources and the complementary tools of governance that mobilize them are a joint source of performance for specific human capital-intensive firms.

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